

U.S. Serial No. 10/737,406
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Docket No. AO733B
S. P. Kayes

CLAIMS

1. (Currently Amended) A method of calibrating a display hand in an electronic device, wherein the display hand conveys information on a display and is operatively coupled to a rotor of a stepping motor via one or more gears, the method comprising the steps of:

initializing a counter;

stepping the rotor of the stepping motor a ~~predetermined~~ number of steps in a first direction and incrementing the counter;

determining whether the counter is less than a predefined value representing at least the total of (i) the maximum number of steps needed to rotate the display hand from an initial position on the display to a position such that the display hand would indicate the maximum value on the display; and (ii) the number of steps needed to rotate the display hand from the initial position on the display to the position such that a channel formed in one of the one or more gears would abut against a tab;

and if so:

stepping the rotor of the stepping motor ~~the predetermined~~ a number of steps in the first direction, incrementing the counter and again determining whether the counter is less than the predefined value;

and if not:

rotating the rotor of the motor in a direction opposite the first direction the same number of steps needed from when the display hand would be at the initial position on the display to the position such that the channel would abut against the tab.

2. (Currently Amended) A calibration assembly for use in an electronic timepiece, wherein the calibration assembly is for initializing the position of a display hand that conveys information displayable on the timepiece, the calibration assembly comprising:

~~a controller for providing signals;~~

a stepper motor ~~operatively coupled to the controller and responsive to the signals;~~
for rotating the at least one display hand in at least one of a clockwise and

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counterclockwise direction in predefined increments;

one or more gears for operatively coupling the rotor of the stepper motor to the display hand, wherein a channel is formed within at least one of the one or more gears; and wherein a tab is provided and positioned to be abutable against an edge of the channel;

~~such that when the controller causes the rotor to rotate in a predetermined direction to cause the tab to abut against the stopper, the position of the display hand is in an initialized position and~~

means, operatively coupled to the stepper motor, for causing the rotor of the stepper motor to rotate in a first direction a number of steps that is at least the total of (i) the maximum number of steps needed to rotate the display hand from an initial position on the display to a position such that the display hand would indicate the maximum value on the display and (ii) the number of steps needed to rotate the display hand from the initial position on the display to the position such that the channel abuts against the tab and thereafter, for causing the rotor of the stepper motor to rotate in a direction opposite the first direction the same number of steps needed from when the display hand would be at the initial position on the display to the position such that the channel abuts against the tab.

3. (Currently Amended) A calibration assembly for use in an electronic timepiece, wherein the calibration assembly is for initializing the position of a display hand that conveys information displayable on the timepiece, the calibration assembly comprising:

a controller for providing signals;

a stepper motor operatively coupled to the controller and responsive to the signals, for rotating the at least one display hand in at least one of a clockwise and counterclockwise direction in predefined increments;

one or more gears for operatively coupling the rotor of the stepper motor to the display hand, wherein at least one of the one or more gears includes a tab extending therefrom; and wherein a stopper is provided and positioned to be abutable against the tab;

~~such that when the controller causes the rotor to rotate in a predetermined direction to cause the tab to abut against the stopper, the position of the display hand is in an initialized position~~

means, operatively coupled to the stepper motor, for causing the rotor of the stepper

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motor to rotate in a first direction a number of steps that is at least the total of (i) the maximum number of steps needed to rotate the display hand from an initial position on the display to a position such that the display hand would indicate the maximum value on the display and (ii) the number of steps needed to rotate the display hand from the initial position on the display to the position such that the tab abuts against the stopper and thereafter, for causing the rotor of the stepper motor to rotate in a direction opposite the first direction the same number of steps needed from when the display hand would be at the initial position on the display to the position such that the tab abuts against the stopper.

4. (Currently Amended) A method of calibrating a display hand in an electronic device, wherein the display hand conveys information on a display and is operatively coupled to a rotor of a stepping motor via one or more gears, the method comprising the steps of:

initializing a counter;

stepping the rotor of the stepping motor a ~~predetermined~~ number of steps in a first direction and incrementing the counter;

determining whether the counter is less than a predefined value representing at least the total of (i) the maximum number of steps needed to rotate the display hand from an initial position on the display to a position such that the display hand would indicate the maximum value on the display; and (ii) the number of steps needed to rotate the display hand from the initial position on the display to the position such that a tab on one of the one or more gears would abut against a stopper;

and if so:

stepping the rotor of the stepping motor ~~the predetermined~~ a number of steps in the first direction, incrementing the counter and again determining whether the counter is less than the predefined value;

and if not:

rotating the rotor of the motor in a direction opposite the first direction the same number of steps needed from when the display hand would be at the initial position on the display to the position such that the

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tab would abut against the stopper.

5. (Original) The calibration assembly as claimed in claim 2, wherein the tab is an integral part of the housing of the timepiece.

6. (Currently Amended) The calibration assembly as claimed in claim 2, wherein the ~~controller~~ means, after the display hand has been placed in the initialized position, provides signals for rotating the rotor of the stepping motor in a direction opposite the ~~predetermined~~ first direction a predetermined number of steps so as to position the display hand to indicate an initial value.

7. (Original) The calibration assembly as claimed in claim 6, wherein the predetermined number of steps is the number of steps needed from the position such that the display hand is indicating the initial value to the position such that the channel would abut against the tab.

8. (Original) The calibration assembly as claimed in claim 3, wherein the stopper is coupled to the housing of the timepiece.

9. (Currently Amended) The calibration assembly as claimed in claim 3, wherein the ~~controller~~ means, after the display hand has been placed in an ~~an~~ the initialized position, provides signals for rotating the rotor of the stepping motor in a direction opposite the ~~predetermined~~ first direction a predetermined number of steps so as to position the display hand to indicate an initial value.

10. (Currently Amended) The calibration assembly as claimed in claim 9, wherein the predetermined number of steps is the number of steps needed from the position such that the display hand is indicating the initial value to the position such that the tab would abut against the stopper.